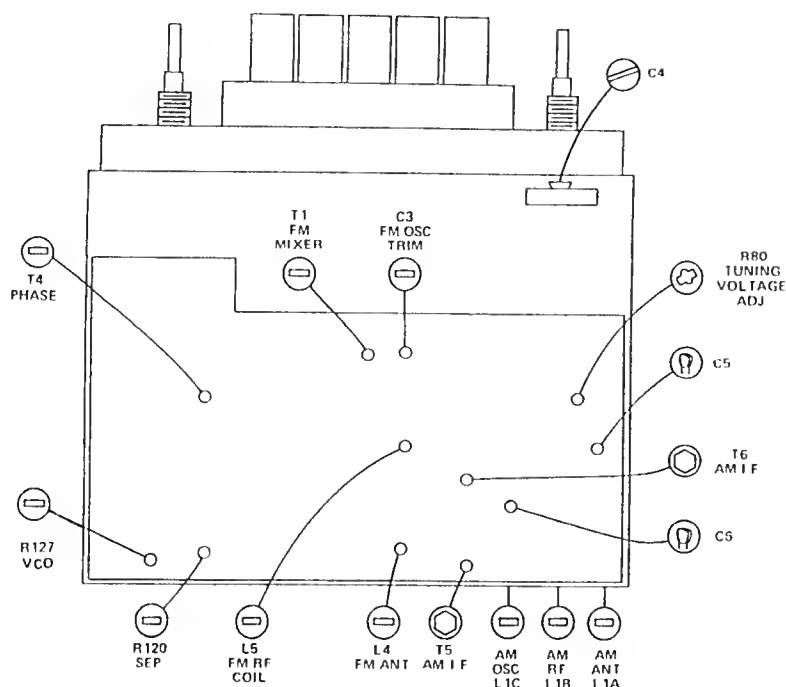




# ALIGNMENT

60HFMT3



TURN VOLUME CONTROL UP. CONNECT AC VOLTMETER ACROSS SPEAKER LEADS. KEEP GENERATOR SIGNAL LOW TO MINIMIZE AGC ACTION.

## AM ALIGNMENT PROCEDURE

STEP	GEN. FREQ. (MODULATED)	GENERATOR COUPLING	TUNER SETTING	ADJUST FOR PEAK
1	262 KHz	THRU .1 MFD TO ANT. SOCKET	HI-END STOP	T5, T6 TOP & BOTTOM
2	MEASURE DEPTH OF A.M. OSC. CORE: SHOULD BE 1 3/8" (3.5CM)			
3	1615 KHz	THRU 82 PF TO ANT. SOCKET	HI-END STOP	OSCILLATOR TRIMMER C6
4	1400 KHz	THRU 82 PF TO ANT. SOCKET	1400	ANTENNA & RF TRIMMERS C4, C5
5	600 KHz	THRU 82 PF TO ANT. SOCKET	600	ANTENNA & RF CORES: L1A, L1B

## FM ALIGNMENT PROCEDURE

IMPORTANT: FIRST MAKE CERTAIN A. M. IS OPERATING PROPERLY; THE A. M. OSCILLATOR CONTROLS FM TUNING.

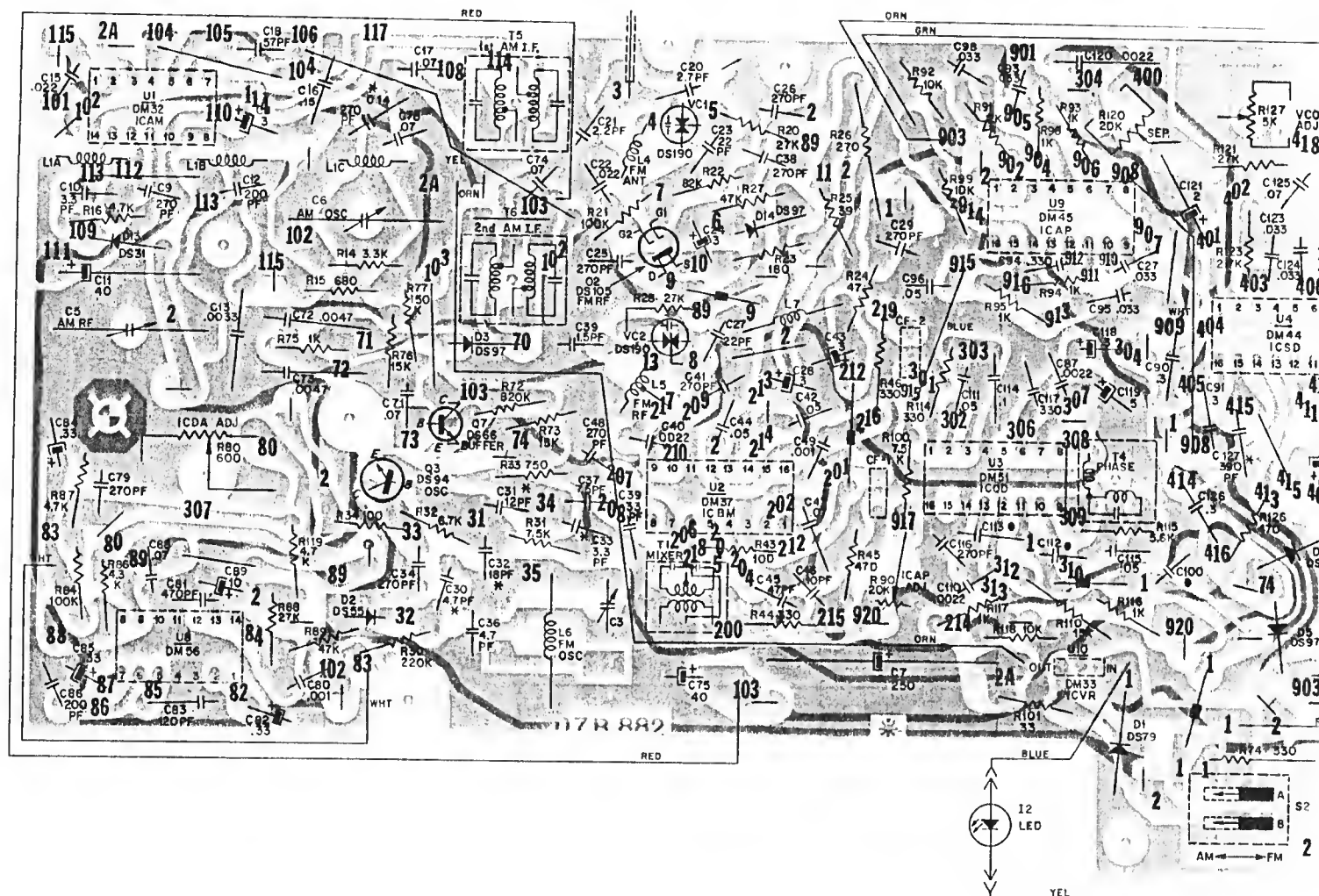
1	—	—	HI-END STOP	ADJUST TUNING VOLTAGE POT TO OBTAIN 7.3 VOLTS AT ICDA PIN 9. REPLACE BOTTOM COVER.
2	108 MHz	ANT. SOCKET	108	OSC. & RF TRIMMERS
3	88 MHz	ANT. SOCKET	88	OSC., RF & ANT. COILS. IF RF COIL DOES NOT PEAK, ADJ. RF TRIMMER UNTIL IT DOES. THEN RE-PEAK OSC. TRIMMER & COIL.
4	99 MHz	ANT. SOCKET	99	MIXER TRANSFORMER PHASE TRANSFORMER

## STEREO ALIGNMENT PROCEDURE

1	WITH WEAK STEREO SIGNAL, ADJUST VCO POT FOR STEREO LIGHT.			
2	WITH STRONG STEREO SIGNAL, ADJUST VCO AND SEPARATION FOR MAXIMUM SEPARATION.			

# SERVICE AIDS

60HFM T3



MAIN BOARD  
(Copper View)

U1  
DM-32  
ICAM

PIN	VOLTAGE	
	FM	AM
1	4.3	4.4
2	6.8	7
3	6.9	7
4	4.3	4.4
5	0.25	0.19
6	.16	11.7
7	.68	.68
8	0	0
9	0	0
10	.75	.66
11	.75	.66
12	.75	.66
13	.39	4.5
14	7.0	7.0

U2  
DM-37  
ICBM

PIN	VOLTAGE
1	1.9
2	1.9
3	0
4	1.1
5	12.3
6	12.3
7	3.3
8	3.3
9	1.7
10	1.7
11	0
12	7.7
13	7.6
14	0
15	7.7
16	4.5

U3  
DM-51  
ICQD

PIN	VOLTAGE
1	1.9
2	1.9
3	1.9
4	0
5	0
6	5.6
7	3.8
8	5.3
9	5.3
10	5.3
11	13.8
12	3.5
13	0.2
14	0
15	4.6
16	0

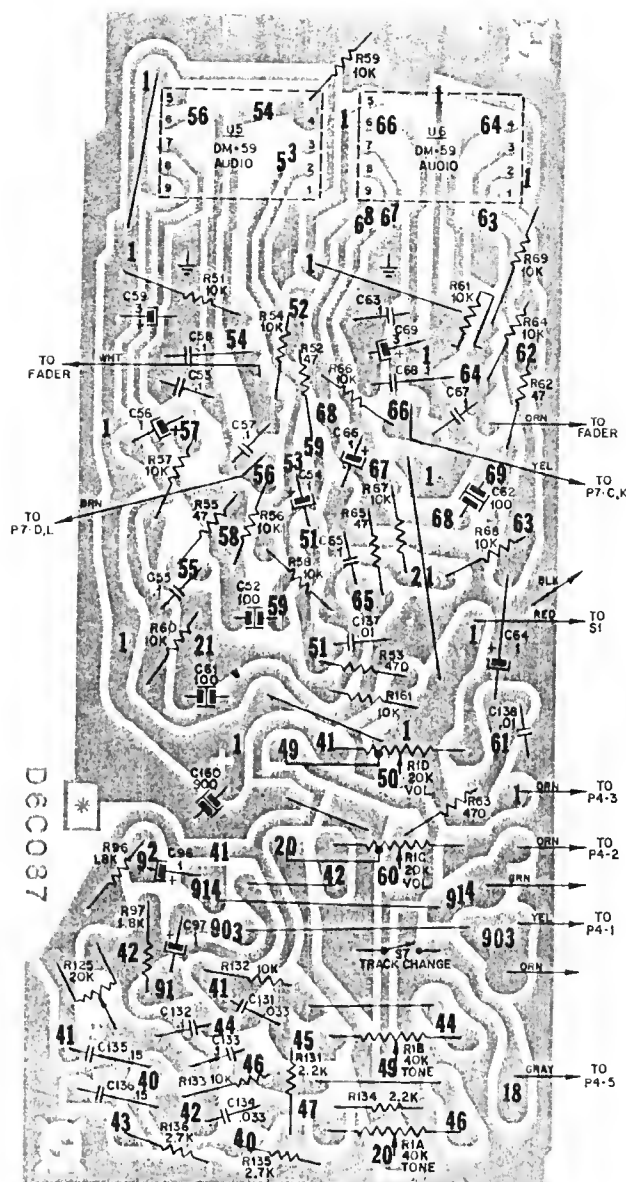
U4  
DM-44  
ICSD

PIN	VOLTAGE
1	2.2
2	5.3
3	3.1
4	2.3
5	2.2
6	3.0
7	12.4
8	0
9	1.8
10	1.8
11	1.6
12	1.8
13	1.8
14	1.8
15	2.8
16	13.9

U5 & U6  
DM-59  
ICBA

PIN	VOLTAGE
1	14
2	7
3	7
4	7
5	14
6	7
7	7
8	7
9	14

\* STRONG SIGNAL IN



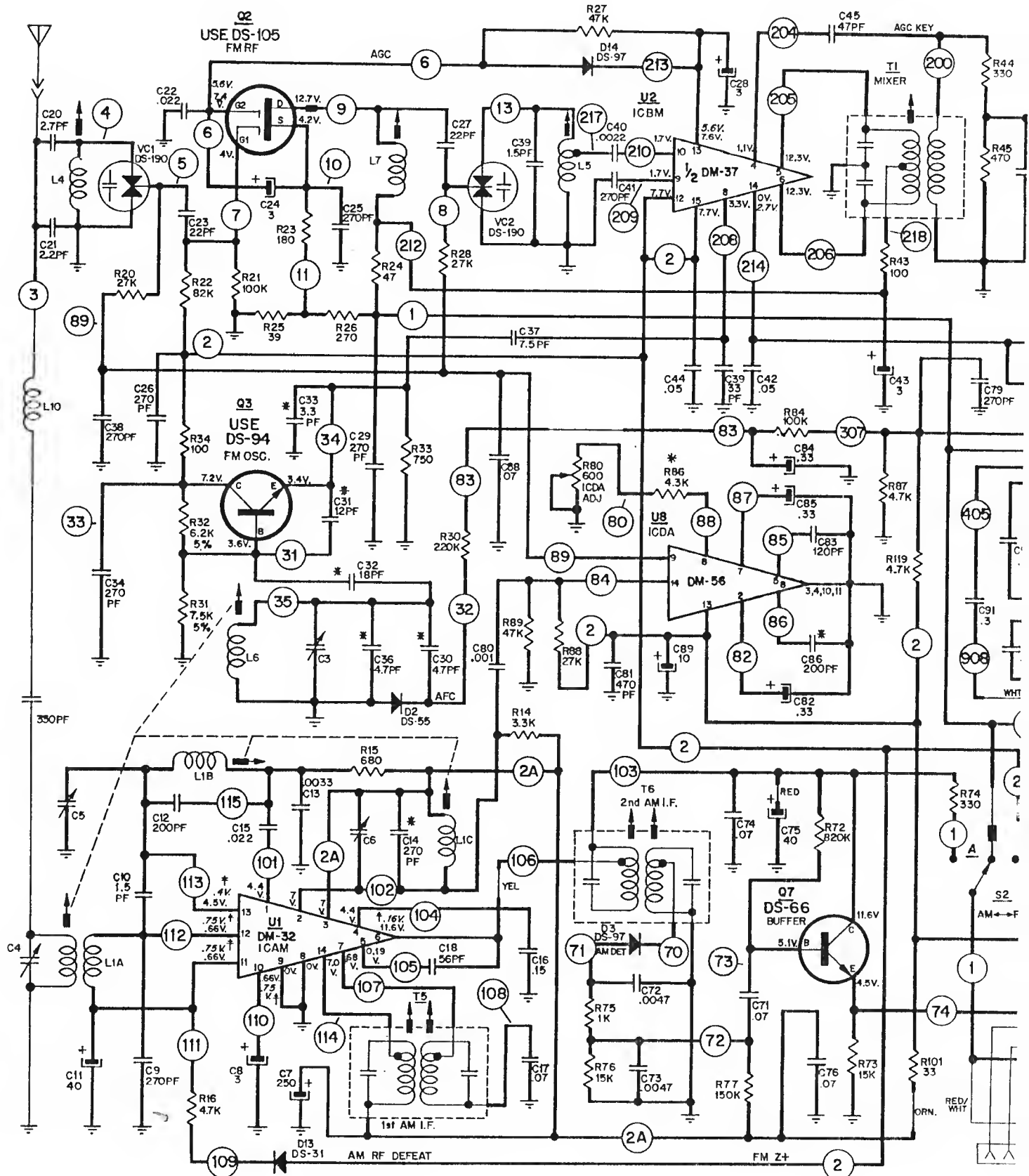
U9  
DM-45  
ICAP

PIN	VOLTAGE
1	8.4
2	.8
3	4.4
4	2.8
5	2.2
6	2.8
7	3.5
8	4.2
9	4.2
10	3.5
11	2.8
12	2
13	2.8
14	4.2
15	.1
16	0

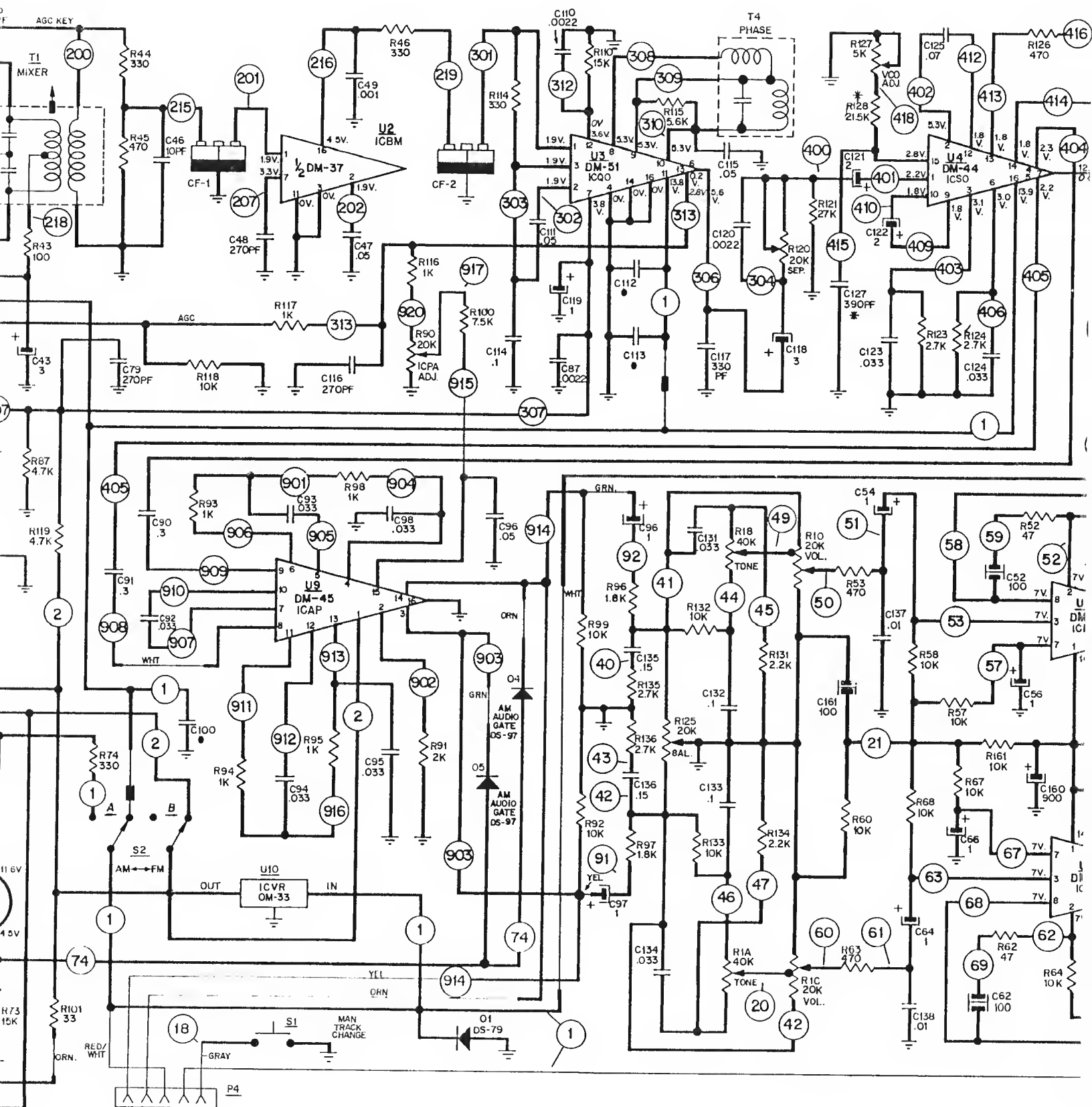
UNLESS OTHERWISE NOTED:

ALL CAPACITORS ARE SHOWN IN MFD AND  
ARE 75 VOLTS OR HIGHER EXCEPT ELECTRO-  
LYTICS AND THOSE NOTED BY AN \*

VOLTAGES MEASURED WITH A VTM  
NO SIGNAL AND 14 VOLTS APPLIED  
RADIO.



**CAUTION**  
GROUND PROBE BEFORE MAKING MEASUREMENTS ON IC. ALSO, DO NOT SHORT IC PINS TOGETHER OR TO GROUND OR IC MAY BE DESTROYED.



## UTION

BEFORE MAKING  
ON IC. ALSO, DO  
IS TOGETHER OR  
MAY BE DESTROYED.

VEGA, ASTRE, MONZA,  
STARFIRE & SKYHAWK 60HFMT3

## SCHEMATIC

\* INDICATES SPECIAL CAPACITOR OR  
RESISTOR, SEE PARTS LIST

● DENOTES SPECIAL BY-PASS,  
SEE PARTS LIST.

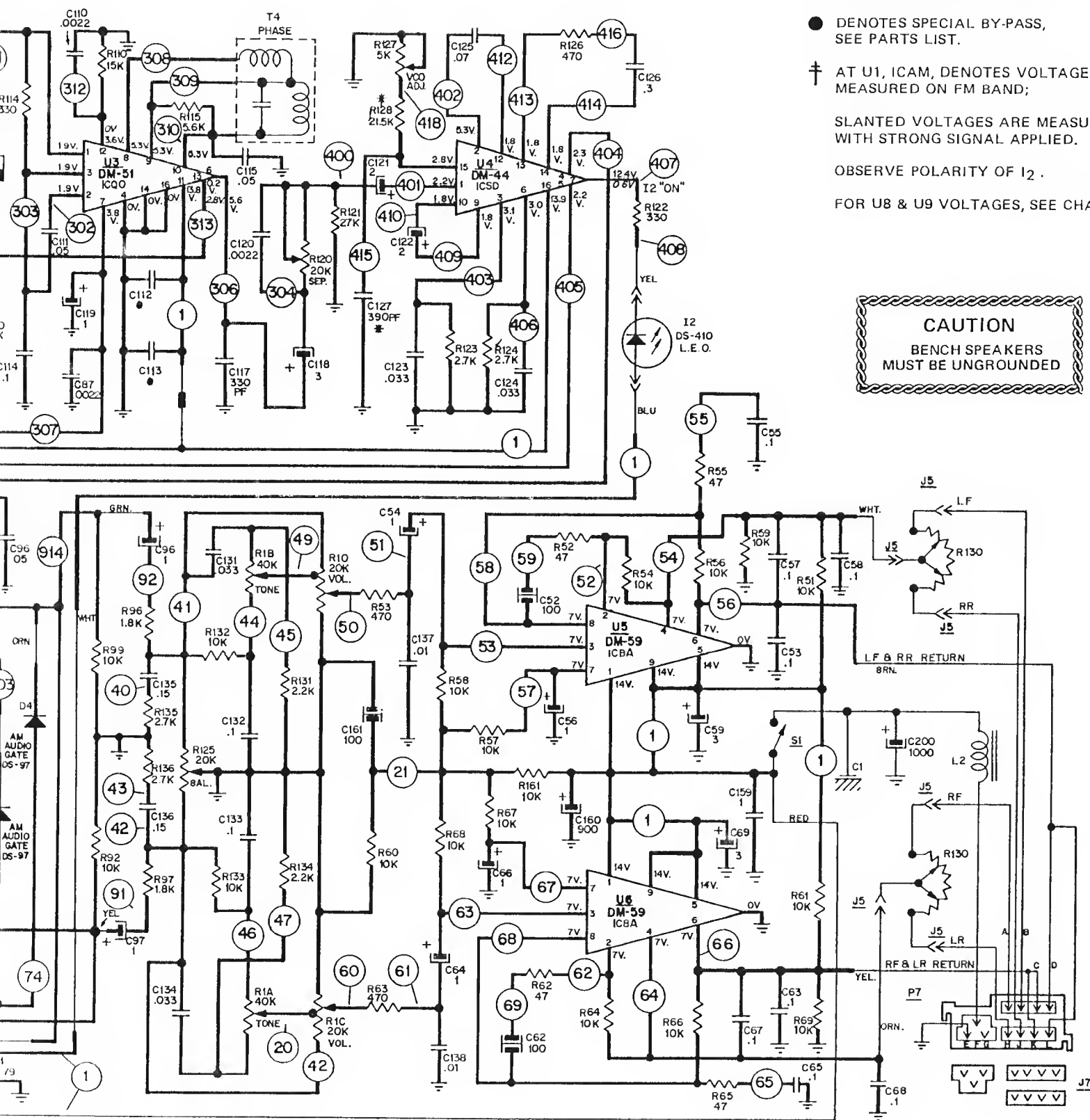
† AT U1, ICAM, DENOTES VOLTAGE  
MEASURED ON FM BAND;

SLANTED VOLTAGES ARE MEASURED  
WITH STRONG SIGNAL APPLIED.

OBSERVE POLARITY OF I<sub>2</sub>.

FOR U8 & U9 VOLTAGES, SEE CHARTS.

**CAUTION**  
BENCH SPEAKERS  
MUST BE UNGROUNDED





# PARTS LIST

ILLUS. NO.	SERVICE NO.	DESCRIPTION	ILLUS. NO.	SERVICE NO.	DESCRIPTION
<b>SEMICONDUCTORS</b>					
D1.....	DS-79	DIODE, SPIKE SUPPRESSION	C36.....	7897765	4.7 PF, 100V, N150 TUBULAR CERAMIC
D2.....	DS-55	DIODE, AFC	C43.....	7936359	3 MFD., 35 VOLT TANTALUM
D3.....	DS-97	DIODE, AM DET	C52.....	9349947	100 MFD., NON-POLAR
D4.....	DS-97	DIODE, AUDIO GATE	C54.....	7936365	1 MFD., 10 VOLT TANTALUM
D5.....	DS-97	DIODE, AUDIO GATE	C56.....	7936365	1 MFD., 10 VOLT TANTALUM
D6.....	DS-31	DIODE, TAPE AUDIO GATE	C59.....	7936359	3 MFD., 35 VOLT TANTALUM
D7.....	DS-31	DIODE, TAPE AUDIO GATE	C61.....	9349947	100 MFD., 16 VOLT NON-POLAR
D10.....	DS-159	DIODE, ZENER, 7 VOLT	C62.....	9349947	100 MFD., 16 VOLT NON-POLAR
D11.....	DS-97	DIODE, TACH. RECTIFIER	C64.....	7930782	1 MFD., 10 VOLT TANTALUM
D12.....	DS-79	DIODE, SPIKE SUPPRESSION	C66.....	7936365	1 MFD., 10V, TANTALUM
D13.....	DS-31	DIODE, AM RF DEFEAT	C69.....	7936359	3 MFD., 35 VOLT TANTALUM
D14.....	DS-97	DIODE, FM AGC	C75.....	9340269	40 MFD., 16 VOLT NON-POLAR
O2.....	DS-105	TRANSISTOR, FM RF AMP., MOS FET	C82.....	7936748	.33 MFD., 35V TANTALUM
O3.....	DS-94	TRANSISTOR, FM OSCILLATOR	C84.....	7936748	.33 MFD., 35V TANTALUM
O7.....	DS-66	TRANSISTOR, AM BUFFER AMP	C85.....	7936748	.33 MFD., 35V TANTALUM
O19.....	DS-83	TRANSISTOR, METER PRE-AMP	C86.....	7296137	200 PF, 100 VOLT, N750
O20.....	DS-66	TRANSISTOR, MOTOR AMP	C89.....	7936360	10 MFD., 16V, TANTALUM
O21.....	DS-513	TRANSISTOR, MOTOR CONTROL	C96.....	7936365	1 MFD., 10 VOLT TANTALUM
VC-1 .....	DS-190	DIODE, FM ANTENNA VARICAP	C97.....	7936365	1 MFD., 10 VOLT TANTALUM
VC-2 .....	DS-190	DIODE, FM RF VARICAP	C100.....	7895980	FM 8Y-PASS
I2.....	DS-410	INDICATOR, STEREO-LED	C112.....	7895980	FM BY-PASS
U1.....	DM-32	MODULE, ICAM	C113.....	7896282	FM BY-PASS
U2.....	DM-37	MODULE, ICBM, BALANCED MIXER	C118.....	7296348	3 MFD., 10 VOLT TANTALUM
U3.....	DM-51	MODULE, ICOD, QUAD. DET.	C119.....	7936365	1 MFD., 10 VOLT TANTALUM
U4.....	DM-44	MODULE, ICSD, STEREO DECODER	C121.....	7313127	2 MFD., 10 VOLT TANTALUM
U5.....	DM-59	MODULE, IC8A, 8BRIDGE AUDIO	C122.....	7313127	2 MFD., 10 VOLT TANTALUM
U6.....	DM-59	MODULE, IC8A, 8BRIDGE AUDIO	C127.....	9341036	390 PF, 100 VOLT, 2%
U8.....	*DM-56	MODULE, ICDA, DIGITAL/ANALOG	C160..	*7898283	900 MFD., 16 VOLT NON-POLAR
U9.....	DM-45	MODULE, ICAP, AUDIO PROCESSOR	C181.....	7936361	15 MFD., 6 VOLT TANTALUM
U10.....	DM-33	MODULE, ICVR, VOLTAGE REG.	C182.....	7936361	15 MFD., 6 VOLT TANTALUM
U11.....	DM-40	MODULE, TAPE PRE-AMP	C187.....	7936674	100 MFD., 16 VOLT ELECTROLYTIC
<b>COILS &amp; TRANSFORMERS</b>			<b>RESISTORS &amp; CONTROLS</b>		
CF-1.....	1223695	FM I.F., CERAMIC, (2/PKG.)	R1.....	9349079	CONTROL; VOLUME, TONE & SWITCH
CF-2.....	1223695	FM I.F., CERAMIC, (2/PKG.)	R80.....	9348417	CONTROL, ICDA CALIBRATION, 600 OHMS
L1.....	*7898352	COIL, AM ANT., RF, OSC.	R86.....	*7897739	RESISTOR, 4.3K, 2%
L2.....	7302543	CHOKE, A+ LINE FILTER	R90.....	9349022	CONTROL, PROCESSOR ADJ., 20K
L4.....	9348413	COIL, FM ANTENNA	R120.....	9349022	CONTROL, SEPARATION, 20K
L5.....	9348414	COIL, FM RF	R125.....	9349022	CONTROL, BALANCE, 200K
L6.....	*7897878	COIL, FM OSCILLATOR	R127.....	9349445	CONTROL, VCO ADJ., 5K
L7.....	7934553	CHOKE, FM RF	R12B.....	9341039	RESISTOR, 21.5K, 2%
T1.....	9346544	TRANSFORMER, MIXER	R130.....	9348389	CONTROL, FADER
T4.....	9346543	COIL, PHASE	R191.....	9349371	CONTROL, MOTOR SPEED, 10K
T5.....	9349015	AM 1ST I.F.	<b>TUNER &amp; TAPE DECK</b>		
T6.....	9349372	AM 2ND I.F.	SEE PARTS BREAKDOWN		
<b>CAPACITORS</b>			<b>MISCELLANEOUS</b>		
C3.....	9348419	TRIMMER, FM OSCILLATOR	70 .....	1223670	8BRACKET PKG., 11/PIN CONNECTOR
C4.....	9349556	TRIMMER, AM ANTENNA	J1.....	9340526	SOCKET, ANTENNA
C5.....	7936524	TRIMMER, AM RF	J5.....	1223668	CONNECTOR & LEAD ASM., 6/PIN, (TO FADER)
C6.....	7311368	TRIMMER, AM OSCILLATOR	J7.....	1223684	CONNECTOR PKG., 3 PCS. FOR BENCH HOOK-UP
C7.....	7936628	250 MFD, 16V, ELECTROLYTIC	P7 .....	7896393	CONNECTOR ASM., INPUT 11/PIN
CB.....	7296348	3 MFD, 10V, ELECTROLYTIC	I1 .....		LAMP, DIAL, NO. 216
C11.....	7298555	40 MFD., 6V, TANTALUM	I2.....	DS-410	STEREO IND.
C14.....	7896854	270 PF, N220 DISC CERAMIC	XL1 .....	7898074	SOCKET & LEAD ASM., INCL. 11
C24.....	7936359	3 MFD., 35 VOLT TANTALUM	XL2 .....	7895019	SOCKET, STEREO IND.
C30.....	9341540	4.7 PF., 100V, N330 TUBE CERAMIC	S2 .....	*7898278	SWITCH AM/FM
C31.....	7897766	12 PF, 100V, N330 TUBULAR CERAMIC			
C32.....	7897740	18 PF, 100V, NPO TUBULAR CERAMIC			
C33.....	9341429	3.3 PF, 100V, N330 TUBULAR CERAMIC			

\* PARTS FIRST USED IN THIS MODEL